WHAT IS CLAIMED IS:

1. A current sense circuit, comprising:

a shunt resistor in a current path for measuring current in the current path;

a sense resistor coupled to the shunt resistor for dividing current supplied to the shunt resistor; and

a resistance value for the sense resistor being selectable such that a ratio of the shunt resistor value to the sense resistor value produces a gain suitable for establishing a range of current measurements to cover a range of sensed current.

2. The circuit according to claim 1, further comprising a voltage buffer disposed between the shunt resistor and the sense resistor.

3. The circuit according to claim 2, wherein the current direction through the sense resistant is constant.

4. The circuit according to claim 2, further comprising a biasing voltage in the voltage buffer.

5. The circuit according to claim 1, where at least one of the shunt and sense resistors is selected to obtain a ratio of thermal coefficients for the resistors that is approximately 1.0.

6. The circuit according to claim 4, further comprising a reference current value subtracted from a sensed current through the sense resistor to offset the bias voltage.

7. The circuit according to claim 6, further comprising a reference current storage element coupled to the sense resistor for storing the reference current value.

8. A current sense circuit, comprising:

a shunt resistor in a wire for measuring current through the wire;

a sense resistor coupled to the shunt resistor to provide a current divider path for the sensed current;

a switch disposed between the shunt resistor and the sense resistor for decoupling the sense resistor from the shunt resistor;

a voltage buffer coupled to the sense resistor and operable to maintain a single current direction through the sense resistor; and

the bias voltage being further operable to provide a reference current value in conjunction with the sense resistor when the switch is operated to decouple the sense resistor from the shunt resistor.

9. The circuit according to claim 8, further comprising a reference current storage element for storing the reference current obtained when the switch is operated to decouple the sense resistor from the shunt resistor.

10. The circuit according to claim 9, further comprising a summing element coupled to the storage element and operable to subtract the reference current value stored in the storage element from a sensed current value through the sense resistor when the switch is operated to couple the sense resistor to the shunt resistor.

11. The circuit according to claim 8, further comprising a specified relationship between the values of the shunt resistor and the sense resistor to obtain a specified gain and dynamic range for measuring a current through the shunt resistor.

12. A current sense circuit, comprising:

a shunt resistor connected to a wire for measuring current through the wire;

a sense resistor coupled to the shunt resistor to provide a current divider circuit;

a relationship between the shunt resistor and the sense resistor values to provide a specified gain and dynamic range for measuring current through the shunt resistor; and

a trimming mechanism coupled to the sense resistor to modify the value of the sense resistor to obtain the specified gain in relationship with the shunt resistor value.

13. The circuit according to claim 12, wherein the trimming mechanism is a network of resistors, individual connections of which are interruptible to modify the overall resistance of the sense resistor.

14. A method for sensing current in a wire, comprising:

providing a shunt resistor in the wire to generate a voltage related to current through the wire;

providing a sense resistor coupled to the shunt resistor to obtain a current divider circuit;

measuring current flow through the sense resistor; and

determining current flowing through the shunt resistor based on a specified relationship between the shunt resistor and the sense resistor.

15. The method according to claim 14, further comprising establishing the relationship between the shunt resistor and the sense resistor based on a desired gain ratio between the shunt resistor value and the sense resistor value.

16. The method according to claim 14, further comprising applying a biasing voltage between the shunt resistor and the sense resistor such that current flows through the sense resistor in one direction.

17. A method for measuring current in a wire, comprising:

providing a shunt resistor in the wire to develop a voltage for measuring current through the wire;

providing a sense resistor coupled to the shunt resistor to obtain a current divider circuit;

providing a switch between the shunt resistor and the sense resistor to couple or decouple the sense resistor and the shunt resistor; and

obtaining a reference current through the sense resistor when the sense resistor is decoupled from the shunt resistor.

18. The method according to claim 17, further comprising storing the reference current.

19. The method according to claim 17, further comprising:

operating the switch to couple the sense resistor and the shunt resistor; and

determining a value for current flowing through the shunt resistor based on current flowing in the sense resistor and the reference current.

20. A method for measuring current in a wire, comprising:

providing a resistance in the wire to develop a voltage when current flows through the wire;

dividing current through the wire between the resistance and a current sensor having a gain relationship with the shunt resistor; and

modifying the current sensor to change the gain relationship to establish a desired gain relationship between the current sensor and the resistance, whereby the current sensor is capable of sensing current through the resistance over an entire dynamic range of operation.

21. The method according to claim 20, further comprising changing a resistance in the current sensor to obtain a desired gain relationship between the current sensor and the resistance.

22. A method for setting a gain relationship between a shunt resistor in a wire for measuring current through the wire and a sense resistor coupled to the shunt resistor to form a current divider circuit, the method comprising:

passing a predetermined current through the shunt resistor and the sense resistor;

obtaining a current measure for the current flowing through the sense resistor;

determining an error percentage based on an expected value for the current measured in the sense resistor and the actually measured current through the sense resistor; and

adjusting the value of the sense resistor to reduce a difference between the expected value of the current and the actually measured current through the sense resistor.

23. The method according to claim 22, further comprising determining an adjustment to the sense resistor based on the difference between the expected current value and the actually measured current value.

24. The method according to claim 23, wherein determining an adjustment further comprises obtaining adjustment parameters for the sense resistor from a look-up table.

25. The method according to claim 22, further comprising measuring current through the sense resistor a second time and comparing the measured current with an expected current value to determine an error percentage.

26. The method according to claim 25, further comprising ensuring a difference between the second current measurement and the expected value of the second current measurement fall within specified error ranges related to the adjustment to the sense resistor.

27. A method for forming a look-up table of values related to configuration of an adjustable sense resistor for use in conjunction with a current shunt resistor for measuring current in a wire, the method comprising:

providing values for resistors in resistor path configurations for a resistor network forming the sense resistor;

simulating selected interruptions in the resistor network to produce a percent change in overall resistance for the sense resistor;

storing the selected interruption configuration and the associated percent change; and

providing a list of the interruption configurations and the associated percent changes.